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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,458	09/30/2003	David John Cox	USFMC.R.122C1	7557
20995	7590	11/24/2004		
KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			EXAMINER ORTIZ, ANGELA Y	
			ART UNIT 1732	PAPER NUMBER

DATE MAILED: 11/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/676,458

Applicant(s)

COX ET AL.

Examiner

Angela Ortiz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6 is/are rejected.
- 7) ☒ Claim(s) 4,5 and 7-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/30/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-10, drawn to a method of forming a pot for an array of hollow membranes, classified in class 264, subclass 255.
- II. Claims 11-20, drawn to an apparatus for use in potting an array of hollow membranes, classified in class 425, subclass 121.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process such as one that does not use polyurethane s the second layer, but a resin that does not bond with the first layer, or molten material such as glass or metal.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with rep. R. Theisen on November 4, 2004 a provisional election was made with oral traverse to prosecute the invention of group I, claims 1-10. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 3, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Molthop, USP 4,389,363 in view of Macheras et al., USP 6,290,756.

The cited primary reference substantially teaches the basic claimed method of potting the ends of hollow fiber bundles 22 wherein a plurality of hollow fibers are assembled, the fiber ends of which are aligned as desired. Prior to applying a polyurethane sealant 26 to the ends 22 of the fibers, the ends are dipped into a liquid

that is maintained in the micropores of the fibers, to prevent gas from passing rapidly through the walls of the hollow fibers. A polyurethane sealant 26 is potted on the ends of the coated fibers, and an end cap 18 may be placed over the sealed ends of the fiber bundle. See col. 2, lines 63-68; col. 3, lines 1-20, 48-68; and col. 4, lines 1-10.

The cited primary reference does not teach the step of forming a first and second layer around the ends of hollow fiber membranes as claimed.

The added secondary reference teaches as conventional the feature of the steps of potting the ends of hollow fibers including forming two distinct resin layers at the end of the hollow fiber membrane tube sheets, wherein the resin layers comprise a hard and soft layer around the fiber ends for the added benefit of both adhesion and flexibility characteristics. The detailed method steps include providing a first and second layer composition, the first layer being a hard epoxy resin compound and the second layer being a soft epoxy resin compound. The membrane is potted by allowing the hollow fiber ends to be embedded in the resin compounds. The composition comprises providing a first compound, allowing at least a partial cure and then providing the second compound. While epoxy resin compounds are preferred, note that the art teaches that other materials may be used, see col. 7, lines 50-60. Note that the materials used have excellent adhesion to each other; see col. 8, lines 10-20. Also see col. 5, lines 1-10, 16-29; col. 7, lines 6-35, 50-60; col. 8, lines 1-45.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a multi-component seal comprising applying a first layer and then a second layer as shown in the added reference, when performing the process

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set forth in the primary reference, for forming a seal having improved adhesion as well as flexibility.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a polyurethane sealant as shown in the primary reference, as the second layer in view of the added reference, as other materials may be used other than epoxy materials, and polyurethane is an equivalent alternative flexible material.

With respect to claims 2-3, see the added reference at col. 5, lines 30-46.

With respect to claim 6, note that the primary reference uses a tubular housing 12 to hold the fibers in place, and such is deemed readable on the claimed potting sleeve; see col. 3, lines 44-50.

Allowable Subject Matter

Claims 4, 5, 7-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

A combination of claim 1 with the subject matter at page 2, lines 28-29 and page 3, lines 1-3 of the instant specification would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

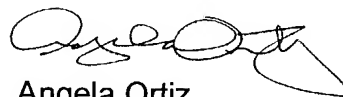
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USP's 4049765; 4105731; 4138460; 4183890; 4190411; 4226921; 4227295; 4359359; 4414172; 4689191; 5192478; 5556591; 5688460; 6113782; 6702561.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela Ortiz whose telephone number is 571-272-1206. The examiner can normally be reached on Monday-Thursday 9:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Angela Ortiz
Primary Examiner
Art Unit 1732